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Date

David L. Parker

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Gong et al.

Serial No.: 09/913,898

Filed: October 3, 2001

For: CHIMERIC GENE CONSTRUCTS FOR GENERATION OF FLUORESCENT TRANSGENIC ORNAMENTAL FISH

Group Art Unit: 1632

Examiner: Joseph T. Woitach

Atty. Dkt. No.: GLOF:007US

I. AMENDMENT; II. RESPONSE TO RESTRICTION REQUIREMENT DATED MARCH 13, 2003; AND III. REQUEST FOR EXTENSION OF TIME

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

This paper is submitted in response to the Restriction Requirement dated March 13, 2003 for which the date for response was April 13, 2003.

A request for a one-month extension of time to respond is included herewith along with the required fee. This extension will bring the due date to May 13, 2003, which is within the six-month statutory period. Should such request or fee be deficient or absent, consider this paragraph such a request and authorization to withdraw the appropriate fee under 37 C.F.R. §§ 1.16 to 1.21 from Fulbright & Jaworski L.L.P. Account No.: 50-1212/GLOF:007US.

I. AMENDMENT

Please cancel pending claims 1-18 without prejudice or disclaimer, and introduce the following new claims, claims 19-59:

19. A method of providing transgenic fish to the ornamental fish market, comprising the steps of:

(a) obtaining an ornamental transgenic fish comprising one or more chimeric fluorescence genes positioned under the control of a promoter, wherein the transgenic fish expresses one or more fluorescent proteins encoded by the one or more fluorescence genes at a level sufficient such that said fish fluoresces upon exposure to one or more of a blue light, ultraviolet light or sunlight; and

(b) distributing said fish to the ornamental fish market.

20. The method of claim 19, further comprising displaying said transgenic fish under a blue or ultraviolet light.

21. The method of claim 20, wherein the transgenic fish are displayed under an ultraviolet light that emits light at a wavelength selected to be optimal for the fluorescent protein or proteins.

22. The method of claim 21, wherein the transgenic fish comprise a GFP and are displayed under an ultraviolet light that emits light at 365 nm.

23. The method of claim 21, wherein the transgenic fish comprise a GFP and are displayed under an ultraviolet light that emits light at 395 nm.

24. The method of claim 21, wherein the transgenic fish comprise a GFP and are displayed under a blue light that emits light at 488 nm.

25. The method of claim 19, wherein the transgenic fish express a GFP.

26. The method of claim 26, wherein the transgenic fish express an EGFP.

27. The method of claim 19, wherein the transgenic fish express a BFP.

28. The method of claim 27, wherein the transgenic fish express an EBFP.

29. The method of claim 19, wherein the transgenic fish express a YFP.

30. The method of claim 29, wherein the transgenic fish express an EYFP.

31. The method of claim 19, wherein the transgenic fish express a CFP

32. The method of claim 31, wherein the transgenic fish express an ECFP.

33. The method of claim 19, wherein the transgenic fish expresses more than one color of fluorescent protein.

34. The method of claim 19, wherein the promoter is a tissue specific promoter.

35. The method of claim 34, where the promoter is a skin specific promoter.

36. The method of claim 35, wherein the promoter is a zebrafish cytokeratin gene promoter.

37. The method of claim 34, wherein the promoter is a muscle specific promoter.

38. The method of claim 37, wherein the promoter is a zebrafish muscle creatine kinase gene promoter.

39. The method of claim 37, wherein the promoter is a zebrafish myosin light chain 2 gene promoter.

40. The method of claim 34, wherein the promoter is an eye specific promoter.

41. The method of claim 34, wherein the promoter is a bone specific promoter.

42. The method of claim 19, wherein the promoter is a ubiquitously expressing promoter.

43. The method of claim 42, wherein the promoter is a zebrafish acidic ribosomal protein gene promoter.

44. The method of claim 19, wherein the promoter is an inducible promoter.

45. The method of claim 44, wherein the inducible promoter is a hormone inducible promoter.

46. The method of claim 44, wherein the inducible promoter is a heavy metal inducible promoter.

47. The method of claim 34, wherein the transgenic fish expresses more than one fluorescent protein color.

48. The method of claim 47, wherein the more than one fluorescent protein is expressed in the same tissue, to effect a new fluorescent color.

49. The method of claim 48, where the transgenic fish expresses a GFP and a BFP.

50. The method of claim 47, wherein the more than one fluorescent proteins are separately expressed in different tissues.

51. The method of claim 50, wherein the transgenic fish expresses a GFP under the control of an eye specific promoter.

52. The method of claim 50, wherein the transgenic fish expresses a BFP under the control of a skin specific promoter.

53. The method of claim 50, wherein the transgenic fish expresses a YFP under the control of a muscle specific promoter.

54. The method of claim 19, wherein the transgenic fish is a stable transgenic fish line obtained by a method comprising the steps of:

(a) obtained an ornamental transgenic fish comprising one or more chimeric fluorescence genes positioned under the control of a promoter, wherein the transgenic fish expresses one or more fluorescent proteins encoded by the one or more fluorescence genes at a level sufficient such that said fish fluoresces upon exposure to one or more of a blue light, ultraviolet light or sunlight; and

(b) breeding the ornamental transgenic fish with a second fish to obtain offspring; and

(c) selecting from said offspring a stable transgenic line that expresses one or more fluorescent proteins.

55. The method of claim 54, wherein the second fish is a wild type fish.

56. The method of claim 54, wherein the second fish is a second transgenic fish.

57. The method of claim 19 or 54, wherein the ornamental transgenic fish is a transgenic zebrafish, medaka, goldfish or carp.

58. The method of claim 54, wherein the second fish is a zebrafish, medaka, goldfish or carp.

59. The method of claim 19 or 54, wherein the ornamental transgenic fish is a transgenic koi, loach, tilapia, glassfish, catfish, angel fish, discus, eel, tetra, goby, gourami, guppy, Xiphophorus, hatchet fish, Molly fish, or pangasius.

The pending claims are attached hereto as Exhibit A.

II. RESPONSE TO RESTRICTION REQUIREMENT

In response to the restriction requirement which the Examiner imposed, Applicants have elected to proceed with a new set of claims, claims 19-59, directed to what is in essence a "method of doing business." This particular method of doing business is the idea of providing certain types of transgenic fish, particularly fluorescent transgenic fish, to the ornamental fish market. For this reason, it is not believed that the current claims fit into any of the restriction groups identified by the Examiner with respect to the previous claims. However, in that there is only a single independent claim, it is appropriate for these claims to co-exist in a single application, if the independent claim is found allowable. See 37 C.F.R. §1.141.

Support for the newly added claims is as follows:

The disclosure of providing fluorescent transgenic fish to the ornamental fish market found in claim 19 is supported by the specification (original PCT specification) at, for example, page 3, lines 22-30, and in Example IV, pages 21-23.

The disclosure of a fish that fluoresces upon exposure to one or more of a blue light, ultraviolet light or sunlight can be found throughout the specification, for example, figures 8-11 and page 20, lines 13-18.

The disclosure of using a light that is optimal for the particular fluorescence (claim 21), as well as the disclosure of GFP (green fluorescent protein) display and emission at 365 nm, 395 nm and 488 nm (claims 22-24) can be found, for example, in Figures 9-10; Figure 11 (showing green fluorescent fish at 365 nm and discussing fluorescence at 488 nm, see page 6, lines 21-24); page 10, lines 19-22; and at page 2, lines 31-31 (395 nm).

The disclosure of the various fluorescence protein genes set forth in claims 26-32 can be found at page 9, lines 22-34.

The disclosure of expressing more than one color (claim 33 and 47) as well as the disclosure of combining two colors in the same tissue to make a third color (48-49) or to make different colors in different tissues (claim 50) can be found in the specification, for example, at page 21, line 29, to page 22, line 4.

Disclosure of the various promoters set forth in claims 34-46 can be found throughout the specification, for example, page 3, line 22 though page 4, line 18; Example II; Example IV, page 21, line 29 to page 22, line 4; page 10, lines 21-22.

Support for fish species other than zebrafish is found at page 22, line 28, though page 23, line 13.

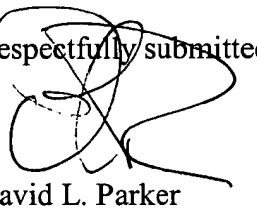
III. REQUEST FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. § 1.136(a), Applicants request an extension of time of one month to and including May 13, 2003 in which to respond to the Office Action dated March 13, 2003. Pursuant to 37 C.F.R. § 1.17, the extension fee is $55.00. A check is enclosed. Should any additional fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to the

enclosed materials, or should an overpayment be included herein, the Commissioner is authorized to deduct or credit said fees from or to Fulbright & Jaworski Deposit Account No. 50-1212/GLOF:007US.

The Examiner is invited to contact the undersigned attorney at (512) 536-3055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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